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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/191,743	11/13/98	ZAMBRANO	R 97-CT-174

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EXAMINER

ESTRADA, M

ART UNIT

PAPER NUMBER

2823

DATE MAILED:

04/11/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

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**Office Action Summary**

Application No.

09/191,743

Applicant(s)

ZAMBRANO, RAFFAELE

Examiner

Michelle Estrada

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 1998 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed 11/13/98 (reference 04/91976, 7/1/92, EP, no translation) fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Election/Restrictions***

Applicant's election with traverse of Group II (claims 1-16) in Paper No. 9 is acknowledged. The traversal is on the ground(s) that claims 22-24 are product-by-process drawn to semiconductor devices formed using certain methods and that the semiconductor devices of claims 22-24 cannot be made by a process that is materially different than the processes of the elected species. This is not found persuasive because both group of claims require different class search.

The requirement is still deemed proper and is therefore made FINAL.

***Drawings***

JP Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

***Specification***

JP The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9/k Claims 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 15, line 5, it appears that "with a second doping level that is lower than the first doping level" should be deleted.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Beinglass.

Beinglass discloses growing a first intermediate layer of in-situ doped polycrystalline silicon 60; and growing a second additional layer of polycrystalline silicon 70 with a second doping level that is lower than the first doping level (Col. 5, lines 3-5); wherein the second doping level is substantially lower than the first doping level; wherein the first intermediate layer 60 and the second additional layer 70 are of the

same conductivity type; wherein both the first intermediate layer and the second additional layer have n-type conductivity; further comprising the step of purging dopant from the surrounding atmosphere, between the steps of growing a first intermediate layer and growing a second additional layer (Col. 4, lines 17-30); performing a subsequent thermal treatment to diffuse dopant from the first intermediate layer 60 to the second additional layer 70 (Col. 4, lines 49-60) wherein the second additional layer 70 is substantially not doped (Col. 5, lines 3-4).

The choice of particular thickness of the polycrystalline silicon would have been a matter of routine optimization. See MPEP 2144.05.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Beinglass and Alspector et al.

Beinglass disclose that the growing of the first intermediate layer is performed by flowing a source of silicon, such as silane into a deposition chamber and a gaseous dopant mixture of phosphine and hydrogen. Beinglass does not disclose that this process is performed by a LPCVD process.

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Alspector et al. disclose forming a first polysilicon layer by LPCVD using silane and phosphine (See Abstract).

Given the substantial similarity between the disclosed context of polysilicon layer formation step of Alspector et al. and that of Beinglass, combining the references to employ the method of Alspector et al. to achieve the polysilicon formation step of Beinglass would have been within the scope of one of ordinary skill in the art because the process of Alspector et al. would then be employed for its disclosed intended purpose of polysilicon formation in such a combination. See MPEP 2144.07.

Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Beinglass and Alspector et al. as applied to claim 8 above, and further in view of Wang et al.

The combination does not disclose that an undoped polysilicon can be grown using a mixture of silane and hydrogen.

Wang et al. disclose the formation of an undoped polysilicon layer 22 using LPCVD and a mixture of silane and hydrogen (Col. 3, lines 34-36).

Given the substantial similarity between the disclosed context of polysilicon formation step of Wang et al. and that of the combination, combining the references to employ the method of Wang et al. to achieve the undoped polysilicon formation step of the combination would have been within the scope of one of ordinary skill in the art

because the process of Wang et al. would then be employed for its disclosed intended purpose of polysilicon formation in such a combination. See MPEP 2144.07.

Claims 12, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beinglass as applied to claims 1-7 and 10-11 above, and further in view of the following comments.

Beinglass discloses capacitor formation using the doped polysilicon layer (Col. 1, lines 31-32).

The examiner takes judicial notice that oxidation of a polysilicon layer to make a capacitor was known at the time of applicant's invention. It is inherent that diffusion of the dopants from the first polysilicon layer to the additional polysilicon layer will occur during the oxidation.

It would have been within the scope of one of ordinary skill in the art to employ the known process for its disclosed intended purpose to achieve the capacitor formation step of Beinglass.




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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Estrada whose telephone number is 703-308-0729. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 (7724, 3431 and 3432) for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
George Fourson  
Primary Examiner  
Art Unit 2823

  
MEstrada  
April 9, 2001